

Virology

Volume 169

1989

EDITORS

W. K. Joklik, EDITOR-IN-CHIEF A. Berk R. Haselkorn M. M.-C. Lai J. R. Nevins
F. Rapp J. K. Rose J. G. Shaw M. D. Summers P. K. Vogt

ASSOCIATE EDITORS

P. Ahlquist	D. DiMaio	M. Hayman	W. Mason	P. M. Pitha-Rowe	C. J. Sherr
G. Air	W. G. Dougherty	P. Hearing	G. McFadden	R. D. Posse	V. Stollar
A. K. Banerjee	J. J. Dunn	K. V. Holmes	J. E. Mertz	R. H. Purcell	J. H. Strauss
C. Basilico	E. Ehrenfeld	M. S. Howitz	P. Model	V. Racaniello	D. F. Summers
K. L. Beemon	R. N. Eisenman	M. M. Howe	E. Moran	L. Ratner	M. M. Susskind
T. Ben-Porat	S. Emerson	R. Hull	T. J. Morris	H. R. Revel	R. I. Swanstrom
K. I. Berns	M. K. Estes	E. Hunter	B. Moss	H. L. Robinson	R. H. Symons
J. M. Bishop	M. Feiss	T. Hunter	R. W. Moyer	W. S. Robinson	P. Tattersall
H. R. Bose, Jr.	B. N. Fields	A. O. Jackson	S. A. Moyer	G. F. Rohrmann	M. J. Tevethia
G. E. Bruening	S. J. Flint	J. E. Johnson	F. A. Murphy	B. Roizman	D. A. Thorley-Lawson
M. J. Buchmeier	W. R. Folk	J. D. Keene	D. J. O'Callaghan	J. A. Rose	C. P. Van Beveren
E. Carstens	R. I. B. Francki	E. Kieff	R. A. Owens	L. B. Rothman-Denes	J. L. Van Etten
B. J. Carter	D. A. Galloway	D. F. Klessig	P. Palese	B. T. Rouse	I. M. Verma
J. M. Coffin	E. P. Geiduschek	E. Knight, Jr.	P. Palukaitis	C. E. Samuel	L. E. Volkman
C. N. Cole	W. Gerhard	D. M. Knipe	E. Paoletti	P. A. Schaffer	E. K. Wagner
R. C. Condit	W. Gibson	R. A. Lamb	J. T. Parsons	B. S. Schaffhausen	W. S. M. Wold
J. A. Cooper	R. M. Goodman	L. Levintow	M. E. Peeples	M. J. Schlesinger	F. Wong-Staal
D. L. Court	D. E. Griffin	D. M. Livingston	S. Pestka	B. M. Sefton	J. S. Youngner
R. J. Courtney	L. A. Guarino	R. B. Luftig	D. J. Pickup	K. V. Shah	N. D. Zinder
S. Dales	E. Harlow	J. Majors			



ACADEMIC PRESS, INC.

Harcourt Brace Jovanovich, Publishers

San Diego New York Boston

London Sydney Tokyo Toronto

Copyright © 1989 by Academic Press, Inc.

All Rights Reserved

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (27 Congress Street, Salem, Massachusetts 01970), for copying beyond that permitted by Sections 107 or 108 of the U. S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1989 articles are as shown on the article title pages; if no fee code appears on the title page, the copy fee is the same as for current articles.

0042-6822/89 \$3.00

MADE IN THE UNITED STATES OF AMERICA

Contents of Volume 169

Number 1, March 1989

Characterization of RNA Transcripts from Herpes Simplex Virus-1 DNA Fragment BamHI-B	Tamir Ben-Hur, Michal Moyal, Angela Rösen-Wolff, Gholamreza Darai, and Yechiel Becker	1
Extrahepatic Replication of Woodchuck Hepatitis Virus in Chronic Infection	C. Walter Ogston, Esther M. Schechter, Caroline A. Humes, and Maryanne B. Pranikoff	9
Avian Retroviral Vectors Derived from Avian Defective Leukemia Virus: Role of the Translational Context of the Inserted Gene on Efficiency of the Vectors	M. Benchaibi, F. Mallet, P. Thoraval, P. Savatier, J. H. Xiao, G. Verdier, J. Samarut, and V. Nigon	15
Antigenic Variants of Bovine Leukemia Virus (BLV) Are Defined by Amino Acid Substitutions in the NH₂ Part of the Envelope Glycoprotein gp51	Daniel Portetelle, Dominique Couez, Claudine Bruck, Richard Kettmann, Marc Mammerickx, Martin Van der Maaten, Robert Brasleur, and Arsène Burny	27
Synthetic Peptides Approach to Identification of Epitopes on Bovine Leukemia Virus Envelope Glycoprotein gp51	Daniel Portetelle, Corine Dandoy, Arsène Burny, Jan Zavada, Helga Siakkou, Hélène Gras-Masse, Hervé Drobecq, and André Tartar	34
Organization of Tomato Bushy Stunt Virus Genome: Characterization of the Coat Protein Gene and the 3' Terminus	Bradley I. Hillman, Patrick Hearne, D'Ann Ruchon, and Thomas J. Morris	42
The Expression of the TMV-Specific 30-kDa Protein in Tobacco Protoplasts Is Strongly and Selectively Enhanced by Actinomycin	Helmut Blum, Hans J. Gross, and Hildburg Beier	51
Sequence Analysis of the Mumps Virus mRNA Encoding the P Protein	Narayanasamy Elango, Jan Kövamees, and Erling Norrby	62
Polypeptide 2A of Human Rhinovirus Type 2: Identification as a Protease and Characterization by Mutational Analysis	Wolfgang Sommergruber, Manfred Zorn, Dieter Blaas, Friederike Fessl, Peter Volkmann, Ingrid Maurer-Fogy, Peter Pallai, Vincent Merlinuzzi, Martha Matteo, Tim Skern, and Ernst Kuechler	68
Segment W of <i>Camposeltis sonorensis</i> Virus: Expression, Gene Products, and Organization	Gary W. Blissard, David A. Theilmann, and Max D. Summers	78
Epitope Model of Tick-Borne Encephalitis Virus Envelope Glycoprotein E: Analysis of Structural Properties, Role of Carbohydrate Side Chain, and Conformational Changes Occurring at Acidic pH	Farshad Guirakhoo, Franz X. Heinz, and Christian Kunz	90
Yellow Fever Virus Proteins NS2A, NS2B, and NS4B: Identification and Partial N-Terminal Amino Acid Sequence Analysis	Thomas J. Chambers, David W. McCourt, and Charles M. Rice	100
Restricted Clonality of Visceral Sarcomas in Avian Sarcoma Virus-Infected Chickens	Michael S. Halpern, Steven B. McMahon, and Francisco Branco	110
Recruitment to the Cytoplasm of a Cellular Lamin-like Protein from the Nucleus during a Poxvirus Infection	David C. Bloom, Rob Massung, Lori Savage, D. K. Morrison, and R. W. Moyer	115

Characterization of Coronavirus JHM Variants Isolated from Wistar Furth Rats with a Viral-Induced Demyelinating Disease	Vincent L. Morris, Christina Tieszer, Joanne Mackinnon, and Dean Percy	127
The L Protein of a VSV Mutant Isolated from a Persistent Infection Is Responsible for Viral Interference and Dominance over the Wild-Type	Jeanne A. Jordan, Patricia Whitaker-Dowling, and Julius S. Youngner	137
Sequence Analysis of the Nucleocapsid Protein Gene of Human Coronavirus 229E	Steven S. Schreiber, Toshio Kamahora, and Michael M. C. Lai	142
Replication of Recombinant ϕ29 DNA Molecules in <i>Bacillus subtilis</i> Protoplasts	Cristina Escarmís, Diego Guirao, and Margarita Salas	152
Phosphorylation of Vesicular Stomatitis Virus M Protein: Evidence for a Second Virion-Associated Protein Serine Kinase Activity	J. David Beckes, Lisa C. Childers, and Jacques Perrault	161
Unidirectional Deletion and Linker Scan Analysis of the Late Promoter of the Human Papovavirus BK	J. Aaron Cassill, Karen L. Deyerle, and Suresh Subramani	172
A Baculovirus Polyhedral Envelope-Associated Protein: Genetic Location, Nucleotide Sequence, and Immunocytochemical Characterization	Adrian F. Gombart, Margot N. Pearson, George F. Rohrmann, and George S. Beaudreau ...	182
The Sequences of the Reovirus Serotype 1, 2, and 3 L1 Genome Segments and Analysis of the Mode of Divergence of the Reovirus Serotypes	Jon R. Wiener and Wolfgang K. Joklik	194
Inefficient Expression in Rat Cells of Transforming Gene of BK Virus with 68-bp Tandem Repeats in the Viral Promoter-Enhancer	Sumie Watanabe and Kunito Yoshiike	204

Short Communications

An <i>In Vitro</i> System for Screening Anti-Hepatitis B Virus Drugs	Keiji Ueda, Toshiki Tsurimoto, Takemitsu Nagahata, Osamu Chisaka, and Kenichi Matsubara	213
Phylogeny of Antigenic Variants of Avian Coronavirus IBV	J. G. Kusters, H. G. M. Niesters, J. A. Lenstra, M. C. Horzinek, and B. A. M. van der Zeijst	217
Influence of Avian Leukosis Viral Sequences on Transmission to the Egg and Embryo	David W. Brown and Harriet L. Robinson	222
Evolution of the 5'-End of Genomic RNA of Murine Coronaviruses during Passages <i>In Vitro</i>	Shinji Makino and Michael M. C. Lai	227
Comparison of Six Different Murine Coronavirus JHM Variants by Monoclonal Antibodies against the E2 Glycoprotein	Fumihiro Taguchi and John O. Fleming	233
The Bovine Papillomavirus Type 1 Transcriptional Activator E2 Protein Binds to Its DNA Recognition Sequence as a Dimer	Christopher A. Moskaluk and Deepak Bastia ...	236

Molecular Cloning and Analysis of the N5 Neuraminidase Subtype from an Avian Influenza Virus	V. R. Harley, C. W. Ward, and P. J. Hudson	239
Protection of Mice Against Lethal Challenge with Herpes Simplex Virus by Vaccination with an Adenovirus Vector Expressing HSV Glycoprotein B	Mark R. McDermott, Frank L. Graham, Tomas Hanke, and David C. Johnson	244
Erratum		
Volume 166, Number 1, September 1988: Nicholas T. Ktistakis, Chia-Yi Kao, and Dimitrij Lang, "In Vitro Assembly of the Outer Shell of Bacteriophage ϕ6 Nucleocapsid," pp. 91-102	248
Author Index for Volume 169, Number 1	249

Number 2, April 1989

Complete Nucleotide Sequence of the Cucumber Necrosis Virus Genome	D'Ann M. Rochon and Jack H. Tremaine	251
Newcastle Disease Virus Evolution. I. Multiple Lineages Defined by Sequence Variability of the Hemagglutinin-Neuraminidase Gene	Takemasa Sakaguchi, Tetsuya Toyoda, Bin Gotoh, Noel M. Inocencio, Keiichi Kuma, Takashi Miyata, and Yoshiyuki Nagai	260
Newcastle Disease Virus Evolution. II. Lack of Gene Recombination in Generating Virulent and Avirulent Strains	Tetsuya Toyoda, Takemasa Sakaguchi, Hideki Hirota, Bin Gotoh, Keiichi Kuma, Takashi Miyata, and Yoshiyuki Nagai	273
Evolution of the Hemagglutinin of Equine H3 Influenza Viruses	Yoshihiro Kawaoka, William J. Bean, and Robert G. Webster	283
The Sequences of Reovirus Serotype 3 Genome Segments M1 and M3 Encoding the Minor Protein μ2 and the Major Nonstructural Protein μNS, Respectively	Jon R. Wiener, John A. Bartlett, and Wolfgang K. Joklik	293
Expression of the 16K Cistron of Tobacco Rattle Virus in Protoplasts	Gerco C. Angenent, Hans B. M. Verbeek, and John F. Bol	305
Nontranslated Cellular mRNAs Are Associated with the Cytoskeletal Framework in Influenza Virus or Adenovirus Infected Cells	Michael G. Katze, Jimmie Lara, and Marlene Wambach	312
Glycosylation Is Not Required for the Fusion Activity of the G Protein of Vesicular Stomatitis Virus in Insect Cells	Mark J. Bailey, Donald A. McLeod, Chil-Yong Kang, and David H. L. Bishop	323
The Role of the Thymus in the Pathogenesis of Hind-Limb Paralysis Induced by ts1, a Mutant of Moloney Murine Leukemia Virus-TB	Gaya Prasad, George Stoica, and P. K. Y. Wong	332
The S RNA Segment of Sandfly Fever Sicilian Virus: Evidence for an Ambisense Genome	Anthony C. Marriott, Vernon K. Ward, and Patricia A. Nuttall	341
The Minimal Transforming Fragment of HSV-2 mtrIII Can Function as a Complex Promoter Element	Clinton Jones	346
Maturation of Japanese Encephalitis Virus Glycoproteins Produced by Infected Mammalian and Mosquito Cells	Peter W. Mason	354

Analyses of the Terminal Sequences of West Nile Virus Structural Proteins and of the <i>in Vitro</i> Translation of these Proteins Allow the Proposal of a Complete Scheme of the Proteolytic Cleavages Involved in Their Synthesis	Thomas Nowak, Petra M. Färber, Gisela Wengler, and Gerd Wengler	365
The Primary Structure of the Lymphocytic Choriomeningitis Virus L Gene Encodes a Putative RNA Polymerase	Maria Salvato, Elaine Shimomaye, and Michael B. A. Oldstone	377
Human Papovavirus BK Early Gene Regulation in Nonpermissive Cells	Karen L. Deyerle and Suresh Subramani	385
Analysis of Phosphorylation Sites in the Exon 1 Region of E1A Proteins of Human Adenovirus Type 5	Michel L. Tremblay, Daniel J. Dumont, and Philip E. Branton	397
Distinct Lineages of Influenza Virus H4 Hemagglutinin Genes in Different Regions of the World	Ruben O. Donis, William J. Bean, Yoshihiro Kawaoka, and Robert G. Webster	408
The Human Cytomegalovirus Strain Towne Glycoprotein H Gene Encodes Glycoprotein p86	Carol Pachl, William S. Probert, Kathy M. Hermsen, Frank R. Masiarz, Lucy Rasmussen, Thomas C. Merigan, and Richard R. Spaete	418
Biological and Immunological Characterization of a Simian Rotavirus SA11 Variant with an Altered Genome Segment 4	John W. Burns, Dayue Chen, Mary K. Estes, and Robert F. Ramig	427
The Pattern of Accumulation of Cauliflower Mosaic Virus-Specific Products in Infected Turnips	A. J. Maule, C. L. Harker, and I. G. Wilson	436
Short Communications		
The Oncogenicity of Avian Adenoviruses. IV. Confirmatory Evidence for Recombination between Viral and Cellular DNA Sequences and Repetition of the Recombinant in Cells of a Tumor Line	Hiroshi Yasue, Masashi Iwami, Yoshinao Koide, Eiichi Ohtsubo, and Masahide Ishibashi	447
Identification of Mutations in the M RNA of a Candidate Vaccine Strain of Rift Valley Fever Virus	Kazuaki Takehara, Mi-Kyung Min, Jane K. Battles, Kazuyoshi Sugiyama, Vince C. Emery, Joel M. Dalrymple, and David H. L. Bishop	452
Molecular Cloning of a Feline Leukemia Proivirus Integrated Adjacent to the <i>c-myc</i> Gene in a Feline T-Cell Leukemia Cell Line and the Unique Structure of Its Long Terminal Repeat	Tomoyuki Miura, Masabumi Shibuya, Hajime Tsujimoto, Masashi Fukasawa, and Masanori Hayami	458
Nucleotide Sequence of the Polyhedrin Gene of <i>Euxoa scandens</i> Cytoplasmic Polyhedrosis Virus (EsCPV)	François Fossiez, Serge Belloncik, and Max Arella	462
Resistance of Human Blood Monocytes to Infection with Herpes Simplex Virus	I. Albers, H. Kirchner, and I. Domke-Opitz	466
Are the PR1 Proteins of Tobacco Involved in Genetically Engineered Resistance to TMV?	John P. Carr, Roger N. Beachy, and Daniel F. Klessig	470
Synthesis and Processing of a 22-26K Murine Cytomegalovirus Glycoprotein Recognized by a Neutralizing Monoclonal Antibody	Lambert C. Loh	474

trans-Activation of Viral Enhancers Including Long Terminal Repeat of the Human Immunodeficiency Virus by the Hepatitis B Virus X Protein	Aleem Siddiqui, Richard Gaynor, A. Srinivasan, John Mapoles, and R. Wesley Farr	479
Low pH-Dependent Sindbis Virus-Induced Fusion of BHK Cells: Differences between Strains Correlate with Amino Acid Changes in the E1 Glycoprotein	William M. Boggs, Chang S. Hahn, Ellen G. Strauss, James H. Strauss, and Diane E. Griffin	485
Erratum		
Volume 167, Number 1, November 1988: Kevin W. Ryan and David W. Kingsbury, "Carboxyl-Terminal Region of Sendai Virus P Protein Is Required for Binding to Viral Nucleocapsids," pp. 106-112	489
Author Index for Volume 169		490
Subject Index for Volume 169		492

